MASSACHUSETTS COLLEGE OF OPTOMETRY

1955 — 1956

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of Optometry
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MASSACHUSETTS COLLEGE OF OPTOMETRY

founded 1894

Bulletin of Information

1955 – 1956

Administrative Offices:

178 NEWBURY STREET, BOSTON 16, MASSACHUSETTS

Massachusetts Optometric Clinic:

472 COMMONWEALTH AVENUE, BOSTON 15, MASSACHUSETTS

Horace Mann Building

Massachusetts College of Optometry

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FACULTY

Professors

Ralph H. Green, O.D., D.O.S. ..... *Optometrical Sciences*
Otto Hochstadt, M.D. ..... *Medical Sciences*
(to be announced) ..... *Biological Sciences*

Associate Professors

Harold Cline, O.D. ..... *Physiological Optics*
Foster Namias, O.D. ..... *Ophthalmic Optics*
Samuel J. Wasserman, B.S., M.Ed., O.D. ..... *Geometrical Optics*
Leslie G. Wright, Jr., B.S., O.D. ..... *Illumination, Physics, Physical Optics*

Assistant Professors

Hyman R. Kamens, O.D. ..... *Clinical Optometry*
Mitchell Kuhn, O.D. ..... *Theoretical and Corrective Optometry*

Instructors

Richard I. Albert, B.S., O.D. ..... *Applied Optometry*
Roger W. Arnold, A.B., M. Ed. ..... *Mathematics*
Robert L. Berk, B.S., M.A. ..... *Visual Psychology, Remedial Reading*
Arthur O. Bruce, M.D. ..... *Ocular Anatomy and Physiology, Applied Ophthalmology*
Henry L. Cabitt, M.D. ..... *Ocular Pathology, Ophthalmology*
Frederick E. Farnum, O.D. ..... *Contact Lenses*
Leon Ginsburg, O.D. ..... *Physiological Optics, Subnormal Vision*
Samuel Joslow, Ph.B. ..... *Remedial Reading*
Frank Kozol, O.D. ..... *Mechanical Optics*
David G. MacFarlane, O.D. ..... *Occupational Vision*
Arthur F. March, Jr., O.D. ..... *Optometrical Orientation, Ethics, Economics, Jurisprudence*
*Seymour Saltzman, O.D. ..... *Clinical Optometry*
Arthur E. Spiller, M.D. ..... *Cranial Anatomy*
Walter N. Tyszkowski, B.S., M.S. ..... *Zoology, Histology, Embryology*
Louis Wekstein, A.B., M.A., D.Sc. ..... *General and Abnormal Psychology*

Assistant

Abraham Shapiro, B.S., O.D. ..... *Clinical Optometry*

Associates in Optometry

Robert L. Bianchi, O.D.
George Cohen, O.D.
Harold Goren, O.D.
Joseph McDermott, O.D.
William Smith, O.D.
Walter P. Taranto, O.D.

**On leave of Absence — Armed Forces.*

COMMITTEES OF THE FACULTY

Academic Affairs

Leslie G. Wright, Jr., B.S., O.D., *Chairman*

Otto Hochstadt, M.D.

Walter N. Tyszkowski, B.S., M.S.

Admissions and Promotions

Foster Namias, O.D., *Chairman*

Samuel Wasserman, B.S., M.Ed., O.D.

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Otto Hochstadt, M.D., *Chairman*

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Awards

Frederick E. Farnum, O.D., *Chairman*

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Louis Wekstein, A.B., M.A., D.Sc.

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Otto Hochstadt, M.D., *Chairman*

Foster Namias, O.D.

Walter N. Tyszkowski, B.S., M.S.

(Dr. Ralph H. Green, dean of the College, serves as a member of all faculty committees.)

THE PROFESSION OF OPTOMETRY

Optometry is the science of sight. It is defined as the science and art devoted to the examination of the eyes, the analysis of ocular functions, and the employment of preventive and corrective methods and agents for the relief of visual and ocular anomalies.

Optometrists are trained to realize that the eyes are not merely optical instruments but in every sense members of the human body. Knowledge of the eyes cannot remain apart from knowledge of the body. An adequately trained optometrist must be an expert in all matters pertaining to vision and must have a knowledge of ocular anatomy, physiology, and pathology.

The great service rendered by the optometrist is to enable the patient not only to see clearly, but also to see with comfort and efficiency. To this end the optometrist is trained:

1. To ascertain the absence or presence of visual anomalies and to adapt lenses to correct, remedy, or relieve abnormal conditions.
2. To determine the presence or absence of abnormal conditions in focusing and fixating at near distances and to adapt remedial measures to correct, remedy, or relieve these abnormal conditions.
3. In the adaption of lenses and prisms and the use of orthoptic training or other coordinating exercises to correct, remedy, or relieve the effects caused by any defect or abnormal condition of the eye or of the two eyes in associated vision.
4. In the development and re-education of the visual skills, thus increasing visual efficiency and rehabilitating many who otherwise would be handicapped.

ORGANIZATION AND PURPOSE

The Massachusetts College of Optometry was established in 1894 as the Klein School of Optics by Augustus A. Klein, M.D. The Massachusetts School of Optometry, the outgrowth of the Klein School of Optics, was incorporated in 1909 and was directed by the late Theodore F. Klein, O.D. In 1946, the Massachusetts School of Optometry was incorporated by the Commonwealth of Massachusetts as a non-profit educational institution for the advancement of optometrical education. In 1950, the school was granted the right to be known as the Massachusetts College of Optometry.

The College is authorized by the Board of Collegiate Authority of the Commonwealth of Massachusetts to confer the degrees of Bachelor of Science in Optometry, Doctor of Optometry, and Doctor of Ocular Science.

The immediate responsibilities of the College reside in a Board of Trustees elected by the members of the Corporation. Membership in the Corporation and on the Board of Trustees represents an assignment of a professional and civic nature with no benefits accruing to any individuals.

The course of instruction offered by the Massachusetts College of Optometry extends over a period of four academic years; the curriculum is planned to prepare its students for the practice of optometry, to indoctrinate them with the ideals of the profession, and to equip them for successful and ethical practice.

STANDING OF THE COLLEGE

The Massachusetts College of Optometry is accredited by the Council on Education and Professional Guidance of the American Optometric Association. It is approved as an institution of higher learning under Veterans Administration Regulations, for training veterans under Public Law 16, Public Law 346, and Public Law 550. The College is a charter member of the Association of Schools and Colleges of Optometry.

COLLEGE BUILDINGS

The Massachusetts College of Optometry occupies two buildings. The main building, known as the Horace Mann Building, is located at 178 Newbury Street, near Copley Square. This building is a four-story, fire-proof structure providing over 22,000 square feet of floor area and houses administrative and faculty offices, the medical sciences laboratory, the biological sciences laboratory, the optics laboratory, the physics laboratory, lecture halls, the library and reading rooms, student lounges and locker rooms, and snack bar.

The Clinic Building is located at 472 Commonwealth Avenue, in the heart of Boston's medical center. This building is a five-story brick structure providing 8,500 square feet of floor area and houses the clinic, the mechanical optics laboratory, the optometry practice laboratories, and administrative offices.

CLINICS

The Massachusetts Optometric Clinic is a department of the Massachusetts College of Optometry. The Clinic Building, located at 472 Commonwealth Avenue, in the heart of Boston's medical center, is specially well adapted for clinical practice.

The clinic is equipped with a variety of modern instruments enabling fourth year students, serving as internes, to become familiar with all types of optometrical instrumentation.

The following clinics are maintained: refraction, vision training and orthoptics, visual field study, ocular pathology and subnormal vision. Numerous social agencies in Greater Boston refer patients to the clinic for complete eye and visual service.

In addition to the regular out-patient clinics, fourth year students are assigned to the Refraction Department of the Boston Evening Medical Clinic, the Orthoptics Department of the Boston Dispensary, and the Medical Mission Dispensary. Visual screening surveys are conducted in schools and community centers.

LIBRARIES

The library of the Massachusetts College of Optometry contains a wide selection of reference books in the basic, biological, optical, ophthalmological and optometrical sciences, as well as in general medicine, together with a collection of reprints and current periodicals.

In addition to the library the College provides two reading rooms with a total seating capacity of 50.

The library is open to students, with a librarian in charge, daily from 9:00 a.m. to 5:00 p.m. and Saturdays from 9:00 a.m. to 12:00 noon. Students may borrow books according to library regulations.

Students also have access to the facilities of the Boston Public Library and the Boston Medical Library for general reference and study.

ADMISSION REQUIREMENTS

Each applicant for admission to the Massachusetts College of Optometry must have at least 30 semester hours of acceptable credits from an accredited college of liberal arts and sciences or junior college or its equivalent.

The minimum course requirements for entrance to the first year class are:

English Composition .....6 semester hours
College Algebra .....3 semester hours
Plane Trigonometry .....3 semester hours
General Chemistry .....6 semester hours
(General Biology, while not required, is recommended.)

The remaining courses necessary to make up the required number of credits are elective, preferably in cultural subjects.

In the selection of students, the Committee on Admissions and Promotions will give precedence to candidates in the order of their scholastic rank as evidenced by their college transcripts.

The College seeks to select for its student body those who not only meet the academic requirements for admission but who also give promise of acquitting themselves creditably in the training program and of being useful members of the profession of optometry after graduation.

Candidates who have been accepted are required to take supplementary aptitude and psychological tests during the first week of attendance. These tests are used primarily to aid the College in assisting the student through its guidance program.

ADMISSION TO ADVANCED STANDING

Advanced standing to the second year may be granted, provided vacancies occur, to those applicants who can present a minimum of 60 semester hours credit earned at an accredited college of liberal arts and sciences or its equivalent.

Applicants must have completed and received credit for those courses required for admission as well as those given in this institution in the first year with the exception of Optometrical Orientation.

An applicant transferring from an accredited college of optometry, in which he is eligible to continue, may receive credit for equivalent courses toward the work of the second year, on the basis of an official transcript. An applicant so admitted must satisfactorily complete the work of the last two years in residence at the Massachusetts College of Optometry.

PROCEDURE FOR ADMISSION

There is only one entry date each year for new students.

1. Application for admission is filed on forms provided by the College.

2. A complete record of high school and college work completed is sent directly from each institution attended. All credentials become the property of the College and are kept on permanent file.

3. At time of application candidates should request the high school and college attended to submit to the Registrar transcripts of work completed.

4. Credentials submitted for entrance are evaluated by the Committee on Admissions and Promotions, which reserves the right to reject any applicant.

5. Upon notification of acceptance, applicants are required to make a deposit of $50 to reserve a place in the class. This deposit is credited to the first semester's tuition at the time of registration but is not refundable except to veterans upon receipt of their Certificate of Eligibility.

6. Every student is required to report in person at the College on the dates specified for registration.

VETERANS

Veterans preparing for admission to the Massachusetts College of Optometry should make certain that when application is made for a Certificate of Eligibility and Entitlement, they clearly indicate that they are taking a pre-optometry program of study and after completion of the program their training will be continued in a college of optometry.

WITHDRAWAL

A student in good scholastic standing who is not subject to disciplinary penalties is entitled to honorable withdrawal at any time. But if a student ceases to attend classes during the school year without communicating with the Dean, his record will be marked to indicate failure in all courses for the semester from which he has absented himself. A student desiring to withdraw from the College should therefore request permission to do so from the Dean.

A student who has been granted an honorable withdrawal from the College may be reinstated subsequently, provided not too long a time has elapsed and provided further that changes in the curriculum do not render such readmission impracticable. Decisions in all cases rest with the Committee on Admissions and Promotions.

No student under the age of twenty-one shall be entitled to an honorable withdrawal without the assent of his parent or guardian furnished in writing to the Dean.

REQUIREMENTS FOR PRACTICE

Inasmuch as the optometry law of each state fixes the requirements for examination for licensure, it will be well for the prospective student to acquaint himself with the requirements of the state wherein he intends to practice. This information may be obtained by communicating with the secretary of the examining board in optometry.

A Corner of the Library

FEES AND EXPENSES

Application fee (payable with application)	$ 5.00
Matriculation fee (payable only once, on entry)	10.00
Late Registration Fee	5.00
Tuition, per academic year (payable one-half at the beginning of each semester) (includes all laboratory fees)	600.00
Student Activities fee (payable one-half at the beginning of each semester)	10.00
Student Physical Examination fee (payable only once, on entry)	5.00
Microscope Rental fee (per year)	5.00
Clinic Fee (payable by fourth year students only; one-half at the beginning of each semester)	10.00
Special and Retake Examination fee (per examination)	5.00
Transcript of Credits (each copy after the first)	1.00
Graduation and Certificate fee (payable before final examinations and non-refundable)	25.00
Duplicate and New Certificates	10.00

Note: P.L. 550 Veterans are expected to pay all fees and charges in the same way as non-veterans.

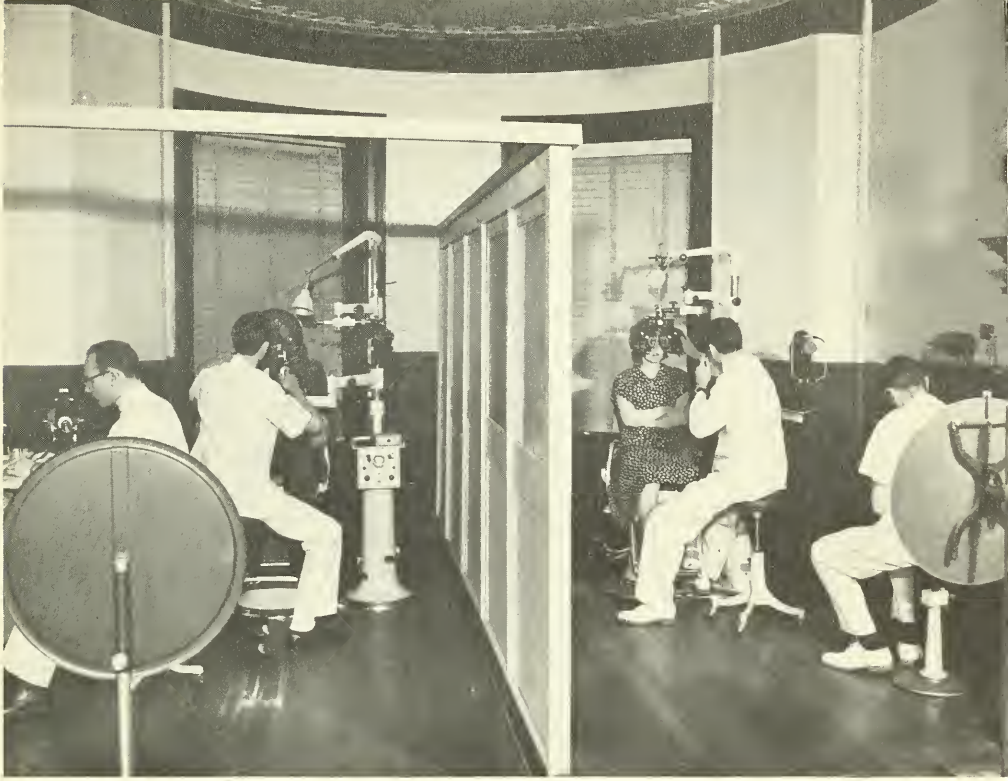
Books, Supplies, and Instruments

Students are required to equip themselves with the prescribed textbooks, instruments, and supplies. The cost of books and supplies in the first year is about $45; in the second year, about $70; in the third year, about $51; and in the fourth year, about $47.

The following equipment is required of all students during their period of training: trial lens set, trial frame, schematic eye, diagnostic set, mechanical optics tool kit, and dissecting set. This equipment amounts to about $350 under present market conditions.

Each student assigned to clinics is required to provide himself with regulation apparel, and to keep it laundered and neat at all times.

The faculty reserve the right to make such additions and changes in the list of prescribed textbooks, instruments, and equipment as are deemed advisable.



Typical Examining Rooms

REFUNDS

The College provides all instruction and accommodation on an academic term basis; refunds on tuition fees are granted only when students are compelled to withdraw to enter the armed forces of the nation. When a refund is granted, such refund is computed on the following basis:

Period of Attendance	*Portion of Tuition Charged*
One week or less	10 percent
Between one and two weeks	20 percent
Between two and three weeks	40 percent
Between three and four weeks	60 percent
Between four and five weeks	80 percent
After five weeks	100 percent

Refunds are not granted on other fees paid.

Dishonorable dismissal or expulsion does not entitle the student to a refund of any fees.

GRADES

Examinations are held at the end of each semester. Grades are reported in the form of percentages, which are interpreted as follows:

90 — 100 Excellent
80 — 89 Above average
70 — 79 Average
60 — 69 Lowest passing grade (Condition)
Below 60 Failure

Clinical optometry and laboratory work are reported as Complete or Incomplete.

No grades are issued to a student before he has discharged his financial obligations to the College.

PROMOTION

The Committee on Admissions and Promotions is charged with the responsibility of evaluating the scholastic achievement of all students. In two-semester courses grades for the first semester are primarily indicative of the progress each student is making. Promotion is based on the final grade for each course.

1. A student failing in two courses or conditioned in three courses is dismissed.
2. A student receiving two conditioned grades, or one failure grade and one conditioned grade is required to take comprehensive examination(s) in such course(s).
3. A student receiving one conditioned grade is permitted to advance to the next year on probation.

Any student who has in the opinion of the Committee on Admissions and Promotions definitely proven his inability to fulfill the academic requirements of the College is dismissed.

GRADUATION AND DEGREES

All candidates for graduation and the degree of Bachelor of Science in Optometry must be approved by the Committee on Admissions and Promotions as having met the following requirements:

1. Credit for all courses in the curriculum must be earned by regular enrollment and attendance in this College or by transfer of credits satisfactorily earned in an approved educational institution.
2. All clinical assignments must be completed.
3. Because of differences in curricula of colleges of optometry the last two years must be satisfactorily completed in this College.
4. All financial obligations to the College must be met.
5. All rules and regulations of the College must be complied with.

Candidates for the degree of Doctor of Optometry must meet the admission requirements and must satisfactorily complete, in addition to the requirements for graduation and the degree of Bachelor of Science in Optometry, the program of study described under Advanced Courses in Optometry. (See Pages 22 and 23).

The honorary degree of Doctor of Ocular Science, upon recommendation of the Board of Trustees, may be conferred upon those who have rendered distinguished service to the profession of optometry.

POLICY ON CHANGES OF PROGRAM AND FEES

The College reserves the right to withdraw, modify, or add to the courses offered or to change the order or content of courses.

The College reserves the right to change its calendar, tuition fee and other fees, the requirements for graduation, and other regulations. No change in fees will become effective, however, until the school year following that in which it is announced.

Any changes in policy will be applicable to all students in the school, including former students who may re-enter.

HONORS AND AWARDS

Graduation with honors is conferred upon students in the graduating class for distinguished scholarship in the courses in the professional curriculum. Students who have earned a grade average of 95 to 100 graduate Summa Cum Laude; those who have earned a grade average of 90 to 95 graduate Magna Cum Laude; and those who have earned a grade average of 85 to 90 graduate Cum Laude.

THE THEODORE F. KLEIN MEMORIAL AWARD

Each year the Board of Trustees of the Massachusetts College of Optometry makes an award of $200 to that member of the first year class who achieves the highest scholastic average in all courses in the first year curriculum.

THE JOSEPH J. SCANLON AWARD

This award is made available annually by the Zeta Chapter of the Omega Epsilon Phi Fraternity to that member of the graduating class who has the best record for efficiency in the conduct of clinical work.

THE LESTER J. EPSTEIN AWARD

This award is made available annually by the Pi Omicron Sigma Fraternity to that member of the graduating class who achieves the highest grades in theoretical and applied optometry.

VALEDICTORY AWARD

This award is made available annually by the Faculty of the Massachusetts College of Optometry to that member of the graduating class who achieves the highest general average in the courses of the professional curriculum.

ALUMNI ASSOCIATION AWARD

The Alumni Association of the Massachusetts College of Optometry offers an Alumni Plaque annually to that member of the graduating class who has achieved an outstanding scholastic and extra-curricular record.

BETA SIGMA KAPPA AWARD

The Beta Sigma Kappa International Honorary Society awards a silver medal annually to that member of the graduating class, designated by the Dean, who has the most outstanding record of scholarship, leadership, and talent.

DEAN'S LIST

A dean's list, issued at the end of each semester, contains the names of students who have received an honor grade in each course with a general average of 85 or better, for all courses taken during the preceding period.

A Corner of the Orthoptics Clinic

STUDENT ACTIVITIES

The Massachusetts College of Optometry regards student activities as an integral part of its educational program and encourages the participation of students in extra-curricular activities. To this end, the students will find organizations and activities which provide opportunities for rounding out the scholastic program.

CAMERA CLUB. The Camera Club of the College welcomes students interested in photography. The College has provided the Club with two dark-rooms for developing and printing.

RESEARCH CLUB. The Research Club was organized to stimulate interest in, and to acquire knowledge of, methods of scientific research as applied to optometry. The College has equipped a research laboratory for use by members of the club.

BASKETBALL. While it is not feasible for a professional school to develop elaborate intercollegiate athletics, the College sponsors a basketball team which plays in the Greater Boston Small Colleges League.

STUDENT COUNCIL. The Student Council is an organization of representatives chosen by the students according to the terms of a constitution duly drawn up and adopted by the student body. The Council serves with a faculty advisor in the consideration and solution of problems presented to it by the administration and by the students. The Council has been most successful in its work of serving both the students and the administration in establishing and maintaining cooperation and good spirit.

PUBLICATIONS. The *Scope,* a monthly publication prepared, edited, and published by the students with the counsel of a faculty adviser, contains technical articles, school and social news, and other matters of interest to the student body.

The annual year book, *Reflections,* is published by the graduating class. It contains the class history, pictures of all the graduates, of the faculty, and of undergraduate groups, as well as a miscellany of snapshots and subjects of interest to the graduating class.

FRATERNITIES AND THE SORORITY. There are at present two Greek-letter fraternities and one sorority. Each organization is provided with a faculty adviser who is responsible for the proper administration of its affairs. Elected representatives from each organization make up the Pan-Hellenic Council, a body which has preliminary jurisdiction over fraternity and sorority regulations.

CLASS ORGANIZATION. Each of the classes elects its own officers and carries on activities as a class. Social functions are sponsored by the classes throughout the year. The senior class plans a number of activities just prior to Commencement.

ALUMNI ASSOCIATION

The alumni of the Massachusetts College of Optometry are organized to promote the welfare of the College, to establish a mutual beneficial relationship between the College and its alumni, to sponsor post graduate educational programs, and to perpetuate the spirit of fellowship among members of the Association.

STUDENT HEALTH

Upon entering the College, each student is given a health examination for the detection of disease and physical defects which might interfere with his success as a student as well as in the practice of optometry. Medical advice and counsel will be given to those who are in need of medical attention.

A first-aid room is maintained in the Administration Building where the school physician may give treatment for minor illnesses and minor accidents.

STUDENT COUNSELING

A carefully integrated plan of guidance, under the direction of the Faculty Committee on Student Counseling, has been organized to give whatever help may be needed by the students. The program consists of four services, namely:

1. Academic Counseling.
2. Health Counseling.
3. Socio-psychological Counseling.
4. Professional Counseling.

In addition, the services of all members of the Faculty are available for advice and guidance. Personal relations between students and instructors are unusually close, thus making the counseling program remarkably effective.

LIVING FACILITIES

The College does not maintain dormitories, but students may secure comfortable living quarters in the immediate vicinity.

The Y.M.C.A., 316 Huntington Avenue, has a register of inspected and approved rooming houses for men students.

Women students may secure rooms and board at reasonable rates at the Students House, 96 The Fenway; The Franklin Square House, 11 East Newton Street; or Brooke House, 79 Chandler Street, all of which are for women only. Early reservations are advisable.

CURRICULUM

First Year

First Semester	*Lecture*	*Lab.*	*Credit*
General Physics	4	2	5
General Psychology	2	0	2
Analytical Geometry	3	0	3
General Zoology	4	2	5
Optometrical Orientation	1	0	1
	14	4	16

Second Semester	*Lecture*	*Lab.*	*Credit*
General Physics	4	2	5
General Psychology	2	0	2
Calculus	3	0	3
Vertebrate Zoology	4	2	5
Optometrical Orientation	1	0	1
	14	4	16

Second Year

First Semester	*Lecture*	*Lab.*	*Credit*
Physiological Optics I	3	2	4
Geometrical Optics I	3	2	4
Ophthalmic Optics I	3	2	4
Abnormal Psychology	2	0	2
Human Anatomy and Physiology	3	2	4
Theoretical Optometry I	3	2	4
Physical Optics	2	0	2
	19	10	24

Second Semester	*Lecture*	*Lab.*	*Credit*
Physiological Optics I	3	2	4
Geometrical Optics I	3	2	4
Ophthalmic Optics I	3	2	4
Visual Psychology	2	0	2
Human Anatomy and Physiology	3	2	4
Theoretical Optometry I	3	2	4
Illumination	2	0	2
	19	10	24

Third Year

First Semester	*Lecture*	*Lab.*	*Credit*
Physiological Optics II	3	2	4
Geometrical Optics II	3	2	4
Ophthalmic Optics II	3	2	4
Ocular Anatomy and Physiology	3	0	3
Theoretical Optometry II	4	4	6
General Histology	2	2	3
General Pathology and Bacteriology	2	0	2
	20	12	26

Second Semester	*Lecture*	*Lab.*	*Credit*
Physiological Optics II	3	2	4
Geometrical Optics II	3	2	4
Ophthalmic Optics II	3	2	4
Ocular Anatomy and Physiology	3	0	3
Theoretical Optometry II	4	4	6
Ocular Histology	2	2	3
General Pathology and Bacteriology	2	0	2
	20	12	26

Fourth Year

First Semester	*Lecture*	*Lab.*	*Credit*
Physiological Optics III	1	0	1
Ophthalmic Optics III	2	2	3
Embryology	2	0	2
Applied Ophthalmology	2	0	2
Theoretical Optometry III	4	2	5
Vision Training and Orthoptics	2	0	2
Applied Optometry	3	0	3
Ethics, Economics, and Jurisprudence	1	0	1
Ocular Pathology	4	0	4
Clinical Optometry	0	5	2
	21	9	25

Second Semester	*Lecture*	*Lab.*	*Credit*
Physiological Optics III	1	0	1
Ophthalmic Optics III	2	2	3
Applied Ophthalmology	2	0	2
Theoretical Optometry III	4	2	5
Vision Training and Orthoptics	2	0	2
Applied Optometry	3	0	3
Ethics, Economics, and Jurisprudence	1	0	1
Ocular Pathology	4	0	4
Clinical Optometry	0	5	2
	19	9	23

DESCRIPTION OF COURSES

ANATOMY AND PHYSIOLOGY

Human Anatomy and Physiology: This course includes the study of the essential features of human anatomy and physiology presented through lectures, and practical demonstrations with prepared human specimens, skeletons, models, and charts. The course is supplemented by laboratory exercises including experiments and studies of blood circulation, measurements of blood pressure, blood physiology, and some blood chemistry, including the study of action currents by means of electrocardiographs, frog and turtle experiments, experiments in physiology of nerves and muscles, action of digestive enzymes, and urinalysis. 3 hours lecture; 2 hours laboratory; 8 hours credit.

Ocular Anatomy and Physiology: The purpose of this course is to give the student a thorough knowledge of the anatomy and physiology of the eye and its appendages. It consists of lectures, demonstrations, lantern slides, charts, models, and dissection of animal eyes. 3 hours lecture; 6 hours credit.

General and Ocular Histology: The purpose of this course is to give the student a knowledge of general histology with a detailed knowledge of the structures of the eyeball and its appendages. The cell and fundamental tissue are considered basic and of primary importance in general and ocular anatomy and pathology. The lectures are supplemented by laboratory work including the study of microscope and lantern slides. 2 hours lecture; 2 hours laboratory; 6 hours credit.

Embryology: Basic principles of general embryology are presented. Ocular embryology is presented in detail. Some of the topics included in general embryology are oögenesis, spermatogenesis, fertilization, the development of the primary germ layers, the development of the brain cavities and nervous system, foetal membranes, the embryological development of the various structures of the eye. Emphasis is placed upon ocular anomalies. 2 hours lecture; 2 hours credit.

BIOLOGY

General Zoology: Representative invertebrate animals are studied in detail, with emphasis upon zoological principles and physiological functions. 4 hours lecture; 2 hours laboratory; 5 hours credit.

Vertebrate Zoology: Representative vertebrates are studied in detail with emphasis on the skeletal homologies of various groups. Evolution is treated with regard for the foregoing, also genetics and comparative embryology. 4 hours lecture; 2 hours laboratory; 5 hours credit.

MATHEMATICS

Analytical Geometry: This course includes the study of points in rectangular and polar coordinate systems; distance, slope, angle between lines; loci; straight line, circle, conic sections; polar and parametric equations; tangents and normals; curve tracing; algebraic and transcendental curves; translation and rotation of axes, point, line, plane in space; quadric surfaces and sections. Adequate preparation in algebra and trigonometry is presupposed. 3 hours lecture; 3 hours credit.

Calculus: This course includes the study of the functions and functional notation; slope of a curve; limits and limit theorems (without proof); the derivative; differentiation of algebraic functions; maxima and minima; rates and differentials; indefinite integrals; constant of integration; definite integral; area under a curve; differentiation of exponential, logarithmic, trigonometric functions; integration of exponential, logarithmic and trigonometric functions. 3 hours lecture; 3 hours credit.

OPTOMETRY

Optometrical Orientation: This course includes the history and development of optics and optometry, organization of optometry, optometry and humanity, trend of optometry, optometry's contributions to visual science, problems confronting optometry, objectives of optometry. 1 hour lecture; 2 hours credit.

Physiological Optics I: This is a study of the functions of the various parts of the eye associated with the phenomena of vision, including refraction and refractive errors, theories of accommodation, mechanism of accommodation, astigmatism, the schematic eye, cardinal points, catoptric images, axes and planes of the eye, aberrations, entoptic phenomena, and the optics of ophthalmometry, ophthalmoscopy, and retinoscopy. The course is supplemented by laboratory exercises and demonstrations. 3 hours lecture; 2 hours laboratory; 8 hours credit.

Physiological Optics II: This is a continuation of Physiological Optics I dealing with the retina and retinal stimuli, including photopic and scotopic vision, afterimages, Weber's law, Fechner's law, critical fusion frequency, color vision, theories of color vision, color blindness, extra-ocular muscles, binocular vision, heterophorias, strabismus, accommodation and convergence. The course is supplemented by laboratory exercises and demonstrations. 3 hours lecture; 2 hours laboratory; 8 hours credit.

Physiological Optics III: This is an additional study of binocular vision, including visual acuity and visual efficiency, visual projection, stereopsis, the Pulfrich phenomenon, stroboscopic motion, retinal images, aniseikonia, eikonic magnification and a general review of Physiological Optics I and II. This course is supplemented by demonstrations. 1 hour lecture; 2 hours credit.

Theoretical Optometry I: This course is designed to prepare the student for actual clinical practice. The subjects presented are introductory in nature and serve to orient the student. The course includes nomenclature, terminology, definitions, measurement of vision, objective refraction methods, subjective refraction methods, check tests, contents of the trial case, ophthalmoscopy (supplemented by a large variety of lantern slides illustrating physiological and pathological variations from the normal), and the interrelationship of accommodation and convergence. This course is supplemented by demonstrations and practice exercises in all phases of instrumentation and by clinical practice of tests. 3 hours lecture; 2 hours laboratory; 8 hours credit.

Theoretical Optometry II: This is a continuation of Theoretical Optometry I. It includes the study of refractive and muscular anomalies, accommodation and convergence reserves and relationship, external examining, history-taking, symptomatology, etiology, stereopsis, and visual skills. Special emphasis is laid on the important features of a complete examination by methods of optometry. This course is supplemented by demonstrations and practice exercises in preparation for actual clinical practice on patients in the clinic. 4 hours lecture; 4 hours laboratory; 12 hours credit.

Theoretical Optometry III: This is a continuation of Theoretical Optometry II. It includes the study of the psycho-physiology of tests conducted in routine examining from the standpoint of diagnosis and corrective procedures, visual field study, strabismus, and contact lenses. 4 hours lecture; 2 hours laboratory; 10 hours credit.

Applied Optometry: Procedure in case analysis is covered, with particular attention to symptomatology, interpretation of the results of tests, syndromes, formation of diagnostic units, etiology, and corrective procedures. Clinical conference periods are devoted to the discussion and analysis of various cases examined in the clinic. 3 hours lecture; 6 hours credit.

Ophthalmic Optics I: This is a study of the classification and description of ophthalmic lenses; physical characteristics of single vision lenses; prisms; decentration, neutralization, transposition and axis marking. Laboratory practice includes classification of lenses, axis marking, neutralization, decentration and edging. 3 hours lecture; 2 hours laboratory; 8 hours credit.

Ophthalmic Optics II: This is a continuation of Ophthalmic Optics I and includes the theory and use of mechanical optics laboratory instruments; anisometropic imbalances; facial measurements and principles of adjusting glasses to the face. Surface grinding procedures are described, including lining up and calculating for lens thicknesses. Laboratory practice includes advanced edging, assembling of zylonite and metal frames, and lining up of prisms. 3 hours lecture; 2 hours laboratory; 8 hours credit.

Ophthalmic Optics III: This is a continuation of Ophthalmic Optics II and includes the consideration of special lenses such as iseikonic, corrected, high-index glass, absorption, and safety glasses. Bifocal and trifocal lenses are discussed in detail from both a theoretical and a practical standpoint. Laboratory practice includes assembling of lenses in rimless mountings; practice in facial measurements and adjusting of glasses to the face; use of mechanical optics laboratory instruments; lining up of bifocal lenses. 2 hours lecture; 2 hours laboratory; 6 hours credit.

Clinical Optometry: This is a course in clinical training under the guidance and supervision of experienced clinical instructors in making complete optometric examinations. Preliminary examinations and diagnoses are made on out-patients by fourth year students serving as clinic internes. The interne's observations and conclusions are verified and discussed by the clinical instructors. 5 hours clinic; 4 hours credit.

Vision Training and Orthoptics: This is a study of the history of orthoptics, visual skills routine and interpretation of results, visual training procedures in heterophorias and heterotropias, vision training in myopia, consideration of reading disabilities, training procedures in anomalous accommodative responses. 2 hours lecture and demonstration; 4 hours credit.

Optometrical Ethics, Economics, and Jurisprudence: This course includes the meaning of professionalism and the standards of professional conduct, a study of legal and ethical codes of optometry, problems of the legal and economic position of the optometrist, office practice, patient control, and inter-professional relationships. 1 hour lecture; 2 hours credit.

PATHOLOGY

General Pathology and Bacteriology: Material covered in this course consists of the study of the fundamentals of general pathology, bacteriology including immunology. The subject matter includes inflammation, repair, regeneration, retrograde changes, disturbances of circulation, contagious diseases, chemical poisons, vitamin deficiencies, endocrines, blood studies, disturbances of growth, the nervous system, and the gastro-intestinal tract. The course also deals with general and special bacteriology and the mechanism of immunity. 2 hours lecture; 4 hours credit.

Ocular Pathology. This course aims to give the student careful and detailed instruction in the recognition of pathological conditions of the eyeball and its appendages and in the differentiation between healthy and unhealthy states. The didactic lectures are supplemented by lantern and microscopic slides of internal and external pathologies and by observation of pathology cases as demonstrated in the clinic. 4 hours lecture; 8 hours credit.

Applied Ophthalmology: The aim of this course is to give the student a thorough knowledge of the ocular manifestations of systemic disorders. The course includes such subject matter as infections and infectious diseases, tuberculosis, virus infections, fungus infections, focal infections, drug and chemical intoxications, diseases of the nervous system, blood diseases, nutritional diseases, and diseases of the cardio-vascular system. 2 hours lecture; 4 hours credit.

PHYSICS

General Physics: This course covers the subjects of basic measurements, vectors, work and energy, laws of fluids, heat, magnetism, electricity, simple harmonic motion, wave motion, sound, and fundamentals of light. The laboratory experiments follow closely the lectures and class work. 4 hours lecture; 2 hours laboratory; 10 hours credit.

Physical Optics: This course includes theories of light, velocity of light, interference, diffraction, polarization, double refraction, and spectroscopy. The lectures are supplemented by demonstrations. 2 hours lecture; 2 hours credit.

Geometrical Optics I: This is a general introduction to the study of optics. It treats of the fundamental principles and methods of geometrical optics underlying such subjects as lights, shadows, photometry, laws of reflection and refraction, reflection at curved surfaces, refraction at spherical surfaces, prisms, infinitely thin lenses. The lectures are supplemented by laboratory exercises and demonstrations. 3 hours lecture; 2 hours laboratory; 8 hours credit.

Geometrical Optics II: This course is a continuation of Geometrical Optics I. It includes the study of Gaussian and Newtonian forms of lens equation, equivalence of thin lenses, optical instruments, entrance and exit pupils, resolving and magnifying power of instruments, thick lenses, thin and thick compound systems, thin and thick prisms, achromatic and aplanatic systems. The course is supplemented by laboratory exercises and demonstrations. 3 hours lecture; 2 hours laboratory; 8 hours credit.

Illumination: This course presents the latest theories and practices for proper illumination of homes, schools, factories, offices, etc. It offers a new method of calculating and rating a lighting system. 2 hours lecture; 2 hours credit.

PSYCHOLOGY

General Psychology: The aim of this course is to acquaint the student with the fundamental facts and theories of psychology. The course deals with a brief history of psychology and a survey of various schools that have contributed to psychology. This is followed by a study of the sensory, nervous and motor systems, drives, motivation, mental conflict, attending and perceiving, intelligence, learning and the formation of habits. The course concludes with a discussion of personality and its social setting. 2 hours lecture; 4 hours credit.

Abnormal Psychology: The purpose of this course is to make the student familiar with psychopathological states. Constant emphasis is placed on psychodynamics. The course begins with a brief history of psychopathology and the treatment of the mentally ill. This is followed by a study of the etiology, symptomatology and dynamics of the psychoneuroses, anxiety neurosis, conversion hysteria, the dissociations, affective neurosis, obsessive-compulsive and phobic states. Great stress is placed on the psychosomatic diseases. The course concludes with a discussion of the functional psychoses, the schizophrenias, manic-depressive psychoses and organic psychoses. 2 hours lecture; 2 hours credit.

Visual Psychology: The subject matter of this course is based on the hypothesis that seeing is more than vision. Both the visual reaction system and visual sensations are reviewed as basic to the psychological process of seeing. Emphasis is placed on the phenomenon of visual perception, including studies of the influence of psychological conditions of the organism on the perceptual process, attention in relation to perception, perception of space, movement, and form; illusions; and perception span. Consideration is given to perception training and the optometrical, psychological, and educational implications of the reading process and remedial problems. 2 hours lecture; 2 hours credit.

PROGRAM OF STUDY IN ADVANCED OPTOMETRY

The Massachusetts College of Optometry offers a program of study in advanced optometry leading to the degree of Doctor of Optometry (O.D.). The program is divided into three parts as follows:

Part 1 — Seminars

A.C.1 — Occupational Vision .....34 hrs.
A.C.2 — Remedial Reading .....34 hrs.
A.C.3 — Subnormal Vision .....34 hrs.
A.C.4 — Vision Training and Orthoptics .....34 hrs.

Part 2 — A.C.5 — Clinical Optometry .....126 hrs.

Part 3 — A.C.6 — Dissertation

DESCRIPTION OF COURSES

A.C.-1 Occupational Vision

Description and evaluation of visual screening tests and survey methods in large vocational groups; prevalence of ocular anomalies in various groups; relationship between vision and vocational efficiency; visual aspects of job analyses; licensing and classification standards and recommendations; occupational eye hazards; occupational vision-program planning.

A.C.-2 Remedial Reading

Psychological analysis of the reading process; the relationship of this to teaching and remedial methods; instrumentation and reading techniques.

A.C.-3 Subnormal Vision

Survey, description, and application of subnormal vision aids including telescopic lenses, microscopic lenses, multiple pin-hole discs, contact lenses, and ptosis crutches.

A.C.-4 Vision Training and Orthoptics

Advanced training in analysis, acquisition, and improvement of visual skills; advanced procedures in the management of concomitant strabismus; treatment of amblyopias; monocular occlusion procedures; instrumentation and techniques; analysis of training data.

A.C.-5 Clinical Optometry

Continuation of undergraduate practice in clinical optometry. In addition to training in all departments of the clinic (orthoptics and visual training, visual field study, ocular pathology, visual analysis) each candidate for the degree must complete a specified number of clinical cases and must submit for approval a specified number of case analyses.

A.C.-6 Dissertation

In partial fulfillment of the requirements for the degree each candidate must write a dissertation on a subject directly or indirectly related to the science of vision. The subject must have the prior approval of the Committee on Research and Publications.

ADMISSION REQUIREMENTS

A graduate of an approved school or college of optometry having a Bachelor's degree may be admitted to the Advanced Optometry curriculum. Each candidate for admission, however, must be approved by the Committee on Admissions and Promotions.

FEES AND EQUIPMENT

Matriculation fee (not required of M.C.O. graduates)	$ 20.00
Tuition fee	200.00
Clinic fee	20.00
Diploma fee	10.00

All above fees are payable at the time of registration and none are refundable.

Each student is required to equip himself with a diagnostic set, trial case, and trial frame.

CALENDAR

(to be announced)

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1955 — 1956